

New avian records from the little-explored Fakfak Mountains and the Onin Peninsula (West Papua)

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SUMMARY.—The Fakfak Mountains on the Onin Peninsula (West Papua) represent one of the ornithologically poorest-known ranges in the world. In the early 1980s, Jared Diamond was the first modern ornithologist to explore the range, followed by David Gibbs in the early 1990s, resulting in the discovery of up to ten still-undescribed bird taxa. I visited the Fakfaks in 2008 and 2009. Details are presented here of two additions to the montane avifauna of the Fakfaks (Varied *Sitella* *Daphoenositta chrysoptera* and Yellow-gaped Meliphaga *Meliphaga flavivictus*) and at least seven lowland species new for the Onin and Bomberai peninsulas (Black-billed Brush Turkey *Talegalla fuscirostris*, Coroneted Fruit Dove *Ptilinopus c. coronulatus*, Orange-breasted Fig Parrot *Cyclopsitta gulelmitertii*, Papuan Spine-tailed Swift *Mearnsia novaeguineae*, Tawny Straightbill *Timeliopsis griseigula*, Silver-eared Honeyeater *Lichmera alboauricularis* and Scrub White-eared Meliphaga *Meliphaga albonotata*). The new lowland records indicate that the ranges of many Papuan lowland birds extend much further west in the southern watershed than was known. I also provide elevational range extensions or the first precise elevational data for several montane birds in the Fakfaks. The vocalisations of the undescribed Fakfak taxon of Vogelkop Bowerbird *Amblyornis inornatus* are documented for the first time. Future collecting in the Fakfaks will be instrumental in understanding the total avian diversity of this range.

The island of New Guinea has a complex geologic and tectonic history (Hall 2002) that has accounted for its complicated biogeography. Although birds are globally well known in terms of taxonomy (e.g. Mayr 1946), field research on New Guinea continues to uncover taxa new to science and complex biogeographical patterns (e.g., Diamond 1985, Beehler *et al.* 2007, Beehler & Prawiradilaga 2010). The island is divided into southern and northern watersheds by the comparatively well-explored Central Range. However, to the north and west there are c.12 major and a few minor outlying and tectonically young mountain ranges that are relatively unexplored ornithologically (Diamond 1985).

Despite improved access to some of these outlying ranges and the logistical ease associated with modern equipment, ornithological exploration has been slow in the last two decades. A recent multi-year expedition (2005–08) to the Foja Mountains in the Indonesian part of the island was a notable exception, and resulted in many discoveries, including up to four bird taxa new to science (Beehler *et al.* 2007, Beehler & Prawiradilaga 2010) and range extensions for others. In contrast, exploration of the little-known mountain ranges of the western Vogelkop and Onin peninsulas, such as the Tamrau, Wandammen, Kumawa and Fakfak mountains, has progressed little since Diamond (1985) explored the latter three in the early 1980s.

The Fakfak region was first visited by Western ornithologists in 1896 (much earlier than most of the Central Highlands), when Doherty and Schadler, collectors for the Rothschild and Leiden museums, respectively, worked the lowlands around Sekru (Diamond 1985). Neither reached high elevations and only ten montane species were obtained (Finsch

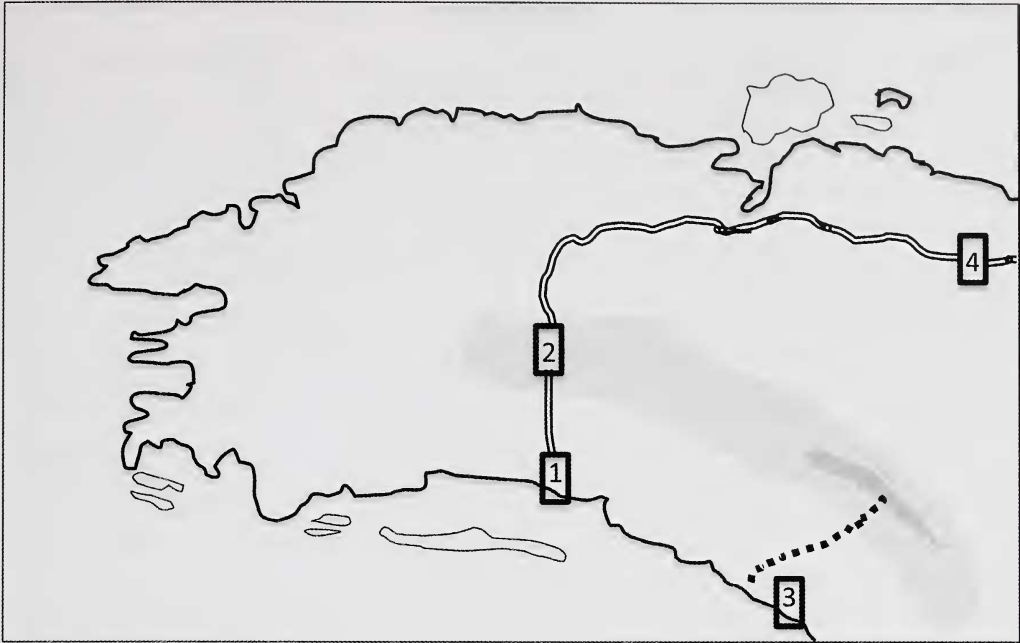


Figure 1. The Fakfak Peninsula in West Papua. The following localities are numbered: 1—Fakfak City, 2—'Taman Anggrek' along the road to Bomberai, 3—Waserat, 4—Woos. The approximate course of the road to Bomberai is shown by the double black line. The city of Bomberai lies off the map. The approximate course of the former oil 'Lane' from near Waserat to the top of the Fakfaks is indicated by the dotted line. The Fakfak range is marked in pale grey, with the approximate extent of the highest part (>950 m) in dark grey.

1900, Rothschild & Hartert 1901). Subsequently, Dr S. Bergman collected at Kambala in the lowlands of the southern Bomberai Peninsula for three weeks in 1948–49 (Gyldenstolpe 1955). J. Diamond is the first ornithologist to have reached higher elevations in the Fakfaks, in February/March 1981 when he ascended to 1,290 m. Although unable to collect, his observations suggested the presence of several undescribed avian taxa (Diamond 1985).

In the early 1990s, the upper Fakfaks were made accessible by oil exploration teams that cut a trail from the coast to high elevations, establishing helicopter landing pads every 2.5 km and leaving empty oil drums at each to fill with rainwater, facilitating hiking in these karst mountains where streams are often subterranean and the availability of fresh water is a major limitation. In August–September 1992, D. Gibbs made use of this infrastructure during his one-week exploration of the Fakfaks. Gibbs (1994) found most of the noteworthy species reported by Diamond (1985) and discovered an undescribed *Paradigalla*, highlighting the potential of the Fakfaks in terms of undiscovered avian diversity. In 2008–09, I undertook two expeditions into the Fakfak Mountains with the goal of building on Diamond (1985) and Gibbs' (1994) work.

Methods

All altitude measurements are based on a pressure-based altimeter calibrated on the coast at Fakfak city. A compass but no GPS was used in the field. In the absence of a permit, no mist-netting or collecting was undertaken. Birds were observed using binoculars, and recordings were made opportunistically using an Edirol R-09 HR and a ME-66 Sennheiser directional microphone.

Study sites

2008.—On 28 August, I flew to the small city of Fakfak (Papua Barat, Indonesia; Fig. 1) and proceeded to the settlement of Waserat ('Worsaret' in Gibbs 1994) via a newly built coastal road. In the 1990s, Waserat was near the starting point of the trail (locally known as the Lane, or 'Len') connecting the lowlands and the highest elevations of the peninsula along a string of helicopter pads (Fig. 1). However, the Lane and the helipads have become overgrown beyond recognition, and the inhabitants of coastal settlements have ceased to venture >c.3 km into the karst forest. I searched for the Lane accompanied by Waserat elder, Pak Wimpi, who formerly worked for the oil companies. We were joined by three young men from Waserat—Neles, Helon and Naptali—who had not previously been inland. After two days of unsuccessful searching, we reached the top of a hill at 750 m with no indication of how to reach the main ridge. The complex local topography includes a karst substratum that is difficult to navigate and cliff-like precipices. Therefore, we opted to return to the coast.

On 2 September I proceeded to Woos (pronounced Woss; Fig. 1)—c.1 day by logging truck from Fakfak along the road to Bomberai. Older inhabitants of Woos, not unlike some in Waserat, originate from the abandoned mountain settlement of Rombena atop the Fakfaks, and are therefore familiar with the mountains. Unfortunately, with just four remaining days I was unable to ascend, so I made observations in the rich, partially inundated lowland forests adjacent to the northern foothills, guided by local elders Pak Dominggus and Pak Yoel. En route to Fakfak on 6 September 2008, I spent one day at the highest point of the pass across the Fakfaks on the Bomberai–Fakfak road, around the former government-run orchid reserve or 'Taman Anggrek' at c.950 m (Fig. 1). Although probably too low for the montane Fakfak specialties found by Diamond (1985) and Gibbs (1994), I made several noteworthy observations there.

2009.—On 20 June, I returned to Fakfak and spent an afternoon at 'Taman Anggrek' (Fig. 1). Next day I continued to Woos with provisions for an eight-day expedition. Led by knowledgeable elder Pak Musa, and accompanied by Pak Harun, Keto, Marten and Mirki, we ascended the Fakfaks from Woos (just above sea level) via the abandoned Rombena (800 m). Our ascent took three days. From Rombena, Pak Musa and I ascended to the highest-looking ridge at 1,300 m, where we spent one day before running out of food. By the time we returned to Rombena, the entire team's food supplies had depleted, forcing an immediate return to the lowlands. The single day spent at highest elevations was very wet and foggy, with only brief periods of good visibility. Our descent to the Bomberai–Fakfak road on 28 June took us past a large commercial logging operation in the north-east mountains that has clear-cut several hundred ha of lowland forest (pers. obs.).

Noteworthy and new observations

Birds recorded in the Fakfak Mountains on the two expeditions but not mentioned below are listed in Table 1.

SOUTHERN CASSOWARY *Casuarius casuarius*

Persists in apparently good numbers in undisturbed lowlands around the Fakfaks where hunting pressure is low. Singles were seen near sea level on 4 September 2008 and on 23 June 2009, 1 km and 3 km from Woos, respectively.

BLACK-BILLED BRUSH TURKEY *Talegalla fuscirostris meyeri*

On 4 September 2008, in lowland forest near Woos, having heard brush turkeys several times in the morning, my guide Pak Dominggus flushed an adult into a tree, where I

TABLE 1
Species seen or heard in the Fakfak region not mentioned in the text.

Species	Locality	2008	2009	Comment
Orange-legged Scrubfowl <i>Megapodius reinwardt</i>	Woos	×		1+1 seen
Little Black Cormorant <i>Phalacrocorax sulcirostris</i>	Woos	×		
Little Pied Cormorant <i>P. melanoleucos</i>	Woos	×		
Grey-headed Goshawk <i>Accipiter poliocephalus</i>	Taman Anggrek	×		1+1 seen
Brahminy Kite <i>Haliastur indus</i>	several sites	×		in disturbed habitat
New Guinea Bronzewing <i>Henicophaps albifrons</i>	Woos, Rombena	×	×	2008: nest near Woos documented in Rheindt (2009); 2009: 1 below Rombena at c.400 m
Slender-billed Cuckoo-Dove <i>Macropygia amboinensis</i>	Taman Anggrek, Rombena, Woos	×	×	
Stephan's Dove <i>Chalcophaps stephani</i>	Rombena		×	heard only
Zoe's Imperial Pigeon <i>Ducula zoeae</i>	Woos, Rombena	×	×	
Purple-tailed Imperial Pigeon <i>D. rufigaster</i>	Woos	×		heard only
Pinon Imperial Pigeon <i>D. pinon</i>	Woos, Rombena	×	×	common
Beautiful Fruit Dove <i>Ptilinopus pulchellus</i>	Woos, Rombena	×	×	
Pink-spotted Fruit Dove <i>P. perlatus</i>	Woos, Rombena	×	×	several
Dwarf Fruit Dove <i>P. nanus</i>	Rombena		×	2–3 below Rombena at c.200 m
Orange-bellied Fruit Dove <i>P. iozonus</i>	Woos, Rombena	×	×	
Superb Fruit Dove <i>P. superbus</i>	Taman Anggrek, Rombena	×	×	only at c.800–950 m
Wompoo Fruit Dove <i>P. magnificus</i>	Rombena		×	
White-breasted Fruit Dove <i>P. rivoli</i>	Rombena		×	only at c.1,300 m
Red-flanked Lorikeet <i>Charmosyna placentis</i>	Woos, Rombena	×	×	
Rainbow Lorikeet <i>Trichoglossus haematodus</i>	Woos, Rombena	×	×	
Black Lory <i>Chalcopsitta atra insignis</i>	Woos	×	×	several
Western Black-capped Lory <i>Lorius lory</i>	Rombena		×	
Eclectus Parrot <i>Eclectus roratus</i>	several sites	×	×	common throughout
Red-cheeked Parrot <i>Geoffroyus geoffroyi</i>	Woos, Waserat, Rombena	×	×	
Moluccan King Parrot <i>Alisterus amboinensis</i>	Woos, Rombena	×	×	several
Yellow-capped Pygmy Parrot <i>Micropsitta keiensis</i>	Woos	×	×	2008: 2+1; 2009: 1
Large Fig Parrot <i>Psittaculirostris desmarestii</i>	Woos	×	×	
Sulphur-crested Cockatoo <i>Cacatua galerita</i>	several sites	×	×	common throughout
Palm Cockatoo <i>Probosciger aterrimus</i>	several sites	×	×	common throughout
Brush Cuckoo <i>Cacomantis variolosus</i>	Woos	×	×	
Chestnut-breasted Cuckoo <i>C. castaneiventris</i>	Rombena		×	only at c.800 m
Channel-billed Cuckoo <i>Scythrops novaehollandiae</i>	Woos	×		
Greater Black Coucal <i>Centropus membeki</i>	Woos, Taman Anggrek	×	×	Woos: 2 (2008), 1 (2009); Taman Anggrek: 1 at 500 m (2008)
Lesser Black Coucal <i>C. bernsteini</i>	Woos		×	2
Common Paradise Kingfisher <i>Tanysiptera galatea</i>	Woos, Waserat, Rombena	×	×	abundant
Sacred Kingfisher <i>Halcyon sancta</i>	several sites	×	×	common
Little Kingfisher <i>Alcedo pusilla</i>	Woos	×		1
Variable Dwarf Kingfisher <i>Ceyx lepidus</i>	Rombena		×	only at c.800 m
Hook-billed Kingfisher <i>Melidora macrorrhina</i>	Woos, Rombena	×	×	heard only

Species	Locality	2008	2009	Comment
Rufous-bellied Kookaburra <i>Dacelo gaudichaud</i>	Woos, Rombena	x	x	several
Dollarbird <i>Eurystomus orientalis</i>	several sites	x	x	common
Blyth's Hornbill <i>Rhyticeros plicatus</i>	several sites	x	x	common
Papuan Frogmouth <i>Podargus papuensis</i>	Woos	x		heard only
Papuan Glossy Swiftlet <i>Collocalia nitens</i>	several sites	x	x	common
Uniform Swiftlet <i>C. vanikorensis</i>	Woos		x	
Moustached Treeswift <i>Hemiprocne mystacea</i>	Woos, Rombena	x	x	
Hooded Pitta <i>Pitta sordida novaeguineae</i>	Woos	x		1 seen; more heard
Red-bellied Pitta <i>P. erythrogaster mackloti</i>	Woos, Waserat, Rombena	x	x	
Chestnut-backed Jewel Babbler <i>Ptilorrhoa castanonotus</i>	Taman Anggrek, Rombena	x	x	2008: heard only at Taman Anggrek at c.950 m; 2009: 1 above Rombena at c.900 m
Black-shouldered Cuckooshrike <i>Coracina morio</i>	Taman Anggrek	x		up to 5 at c.950 m
Boyer's Cuckooshrike <i>C. boyeri</i>	Woos, Waserat, Rombena	x	x	
White-bellied Cuckooshrike <i>C. papuensis</i>	Woos, Waserat	x	x	
Stout-billed Cuckooshrike <i>C. caeruleogrisea</i>	Rombena		x	female at c.1,000 m
New Guinea Black Cuckooshrike <i>C. melas</i>	Taman Anggrek, Rombena, Woos	x	x	
Black-browed Triller <i>Lalage atrovirens</i>	Woos		x	1-2
Brown Oriole <i>Oriolus szalayi</i>	Woos	x	x	common
Emperor Fairy-wren <i>Malurus cyanocephalus</i>	Woos	x	x	
Large-billed Gerygone <i>Gerygone magnirostris</i>	Woos	x		several
Fairy Gerygone <i>G. p. palpebrosa</i>	Waserat, Taman Anggrek, Rombena	x	x	
Rusty Mouse-Warbler <i>Crateroscelis murina</i>	Taman Anggrek, Woos, Waserat, Rombena	x	x	
Pale-billed Scrubwren <i>Sericornis s. spilodera</i>	Taman Anggrek, Waserat	x		all at 750-950 m
Rufous-backed Fantail <i>Rhipidura rufidorsa</i>	Woos, Rombena	x	x	
Northern Fantail <i>R. rufiventris gularis</i>	Woos, Waserat, Rombena	x	x	
Black Thicket Fantail <i>R. maculipectus</i>	Woos	x		2
Sooty Thicket Fantail <i>R. threnothorax</i>	Woos, Rombena	x	x	to 600 m
White-bellied Thicket Fantail <i>R. leucothorax</i>	Woos	x	x	common
Shining Flycatcher <i>Myiagra alecto</i>	several sites	x	x	common
Mountain Peltops <i>Peltops montanus</i>	Taman Anggrek, Rombena	x	x	at c.800-1,300 m
Lowland Peltops <i>P. blainvillii</i>	Woos	x		common
Yellow-breasted Boatbill <i>Machaerirhynchus flaviventer</i>	Rombena		x	1 at c.800 m
Golden Monarch <i>Monarcha chrysomela</i>	Woos	x	x	few; to 150 m
Spot-winged Monarch <i>M. guttula</i>	Woos, Taman Anggrek, Waserat, Rombena	x	x	
Hooded Monarch <i>M. manadensis</i>	Woos	x	x	common
Black-winged Monarch <i>M. frater</i>	Taman Anggrek, Rombena	x	x	
Friilled Monarch <i>Arses t. telescopthalmus</i>	Woos, Waserat, Rombena	x	x	

Species	Locality	2008	2009	Comment
Black-sided Robin <i>Poecilodryas hypoleuca</i>	Woos	×		common
Olive Flyrobin <i>Microeca flavovirescens</i>	Waserat, Rombena	×	×	Waserat: 1-2 at 750 m; Rombena: 1+1 at 700-800 m
Rusty Whistler <i>Pachycephala hyperythra</i>	Taman Anggrek	×		1; contrast between grey cap and brown back as well as contrasting white throat were seen
Grey-headed Whistler <i>P. griseiceps</i>	Taman Anggrek, Waserat, Woos, Rombena	×	×	
Little Shrike-Thrush <i>Colluricincla megarhyncha</i>	Woos, Waserat, Taman Anggrek, Rombena	×	×	
Rusty Pitohui <i>Pitohui ferrugineus</i>	Taman Anggrek, Rombena	×	×	to 1,000 m
Crested Pitohui <i>P. cristatus</i>	Taman Anggrek, Rombena	×	×	at 500-950 m
Olive-crowned Flowerpecker <i>Dicaeum p. pectorale</i>	several sites	×		common
Black Berrypecker <i>Melanocharis nigra</i>	Taman Anggrek, Woos, Rombena	×	×	to 1,000 m
Olive-backed Sunbird <i>Cinnyris jugularis frenatus</i>	Woos	×		
Black Sunbird <i>Leptocoma aspasia</i>	Woos	×	×	
Yellow-bellied Longbill <i>Toxorhamphus novaeguineae</i>	Taman Anggrek, Waserat, Woos, Rombena	×	×	
Red Myzomela <i>Myzomela cruentata</i>	Taman Anggrek	×		several
Red-collared Myzomela <i>M. rosenbergii</i>	Rombena		×	male at c.1,200 m
Green-backed Honeyeater <i>Glycichaera fallax</i>	Woos	×		1-2
Long-billed Honeyeater <i>Melilestes megarhynchus</i>	Woos	×		
Tawny-breasted Honeyeater <i>Xanthotis flaviventer</i>	Woos, Waserat, Taman Anggrek, Rombena	×	×	
Helmeted Friarbird <i>Philemon buceroides novaeguineae</i>	Woos	×	×	
Mimic Meliphaga <i>Meliphaga analoga</i>	Taman Anggrek	×		c.2
Papuan Mountain Drongo <i>Chaetorhynchus papuensis</i>	Taman Anggrek, Rombena		×	surprisingly common to 1,000 m
Spangled Drongo <i>Dicrurus bracteatus carbonarius</i>	Woos	×	×	
Metallic Starling <i>Aplonis metallica</i>	Woos	×	×	
Yellow-faced Myna <i>Mino dumontii</i>	Woos	×	×	
Golden Myna <i>M. anais</i>	Woos, Waserat	×	×	near sea level
Hooded Butcherbird <i>Cracticus cassicus</i>	Woos	×	×	
Black Butcherbird <i>C. quoyi</i>	Woos	×	×	
New Guinea Babbler <i>Pomatostomus isidorei</i>	Woos, Rombena	×	×	several groups
White-eared Catbird <i>Ailuroedus buccoides</i>	Rombena		×	to 800 m
Spotted Catbird <i>A. melanotis</i>	Taman Anggrek, Rombena	×	×	heard only; 950-1,300 m
Grey Crow <i>Corvus tristis</i>	several sites	×	×	common
Twelve-wired Bird-of-Paradise <i>Seleucidis melanoleuca</i>	Woos	×	×	several (including male-plumaged birds)
King Bird-of-Paradise <i>Cicinnurus regius</i>	Woos	×	×	common (including male-plumaged birds)
Magnificent Bird-of-Paradise <i>C. magnificentus</i>	Waserat, Taman Anggrek, Rombena	×	×	including male-plumaged birds

Species	Locality	2008	2009	Comment
Lesser Bird-of-Paradise <i>Paradisaea minor</i>	Taman Anggrek, Woos, Rombena	×	×	including male-plumaged birds
Magnificent Riflebird <i>Ptiloris m. magnificus</i>	Woos, Waserat, Taman Anggrek, Rombena	×	×	including male-plumaged birds
Crinkle-collared Manucode <i>Manucodia chalybata</i>	Taman Anggrek	×	×	several; the bump above the eye, lack of mane and hollow hooting vocalisations are diagnostic
Trumpet Manucode <i>M. keraudrenii</i>	Woos, Rombena		×	c.100–800 m; quite arboreal; the flat forehead and nasal vocalisations are diagnostic

observed it for c.1 hour. The bird proved not to be the Red-billed Brush Turkey *T. cuvieri* expected on distribution (Rand & Gilliard 1968, Beehler *et al.* 1986) but a Black-billed Brush Turkey. The black (not red) bill and reddish-black (not yellow-olive) face were clearly seen. The bird also had bright-orange legs, very distinct from the 'chrome to lemon-yellow' (Rand & Gilliard 1968) or 'yellow' (Beehler *et al.* 1986) reported for *T. f. fuscirostris* and *T. f. occidentalis* from east of Etna Bay, but compatible with westernmost *T. f. meyeri* described by Roselaar (1994) from the area between Etna Bay / Nabire and the Wandammen Peninsula. Another was briefly seen near Woos on 22 June 2009.

T. fuscirostris is reported to reach as far west as the Wandammen Peninsula (Roselaar 1994), i.e. almost precisely 200 km due east of my location, and is thought to be replaced by *T. cuvieri* throughout the Bomberai and Onin peninsulas. Beehler *et al.* (1986) reported that, at least east of Etna Bay, where *T. cuvieri* and *T. fuscirostris* are said to overlap, *T. cuvieri* replaces *T. fuscirostris* in the foothills, whereas *T. fuscirostris* occupies the lowlands. Pak Dominggus has caught and eaten dozens of these brush turkeys at various elevations in the Fakfaks over the years. When shown the illustrations in Beehler *et al.* (1986), he confirmed that none of the local birds look like Red-billed Brush Turkeys. The Fakfaks are probably at the westernmost extension of the distribution of Black-billed Brush Turkey. Further research in intervening areas of the Bomberai Peninsula and specimens are needed to corroborate whether and how *T. fuscirostris* and *T. cuvieri* come into contact.

GREAT-BILLED HERON *Ardea sumatrana*

Beehler *et al.* (1986) considered this a scarce resident throughout New Guinea's lowlands. One seen in inundated forest at Woos on 22 June 2009 may be the first record for the Bomberai and Onin peninsulas.

NEW GUINEA HARPY EAGLE *Harpyopsis novaeguineae*

On 6 September 2008, a frequently vocalising bird was heard from the top of a ridge along the road at 'Taman Anggrek' (c.950 m). This is the second record of this scarce species from the Fakfaks, following J. Diamond's (*in litt.* 2011) unpublished observation.

WESTERN CROWNED PIGEON *Goura cristata*

According to local elders, this scarce and hunted species is still relatively abundant in undisturbed forests around Woos and in the northern Fakfak foothills. One was seen 1 km from Woos on 4 September 2008, and the species was seen once or twice daily up to 500 m on 22–24 June and 27 June 2009.

PHEASANT PIGEON *Otidiphaps nobilis*

Previously discovered in the Fakfaks by Diamond (1985), I saw this scarce pigeon c.3 km from Woos at c.100 m on 22 June 2009. The single bird was in fairly level terrain a few hundred metres from the nearest foothills.

ORNATE FRUIT DOVE *Ptilinopus ornatus gestroi*

On 3–4 September 2008, I observed 2–3 in lowland forest around Woos near sea level and several km from the nearest foothills, and thus unusually low for this species. *P. o. gestroi* is quite different phenotypically from nominate *ornatus*, which occurs on the Vogelkop Peninsula.

CORONATED FRUIT DOVE *Ptilinopus coronulatus*

Rand & Gilliard's (1968) description of subspecies ranges, which has been followed in most subsequent literature, suggested the species may be absent from the Onin and Bomberai peninsulas. Illustrations in Beehler *et al.* (1986) broadly distinguished the northern subspecies (lavender-grey crown) and southern subspecies (purple crown). Two singles near Woos on 3 September 2008 had distinctly purple crowns and indicate that the westward distribution of nominate *coronulatus* does not end at the Mimika River (Rand & Gilliard 1968), but extends to the Fakfak region.

ORANGE-BREADED FIG PARROT *Cyclopsitta guliemitertii* / **DOUBLE-EYED FIG PARROT** *C. diophthalma*

Both species were seen around Woos on several days in both years, sometimes within the village's perimeter. Rand & Gilliard (1968) did not include the Onin and Bomberai peninsulas in the range of *C. guliemitertii*, and Beehler *et al.* (1986) stated that it is absent from much of the southern watershed where it may be replaced by *C. diophthalma*. My observations suggest that *C. guliemitertii* is common in the lowlands of the Bomberai and Onin peninsulas, and that it is syntopic with *C. diophthalma* there. Subspecific identification of *C. guliemitertii* was not attempted.

YELLOW-BILLED KINGFISHER *Halcyon torotoro*

In both years, widely heard and less often seen in the environs of Waserat, 'Taman Anggrek', Woos and the Fakfak range itself. At 'Taman Anggrek', it was heard at c.950 m on 6 September 2008, and one was seen at c.1,300 m in the main Fakfak range on 26 June 2009. Birds at high elevations did not seem to differ vocally or in size from birds lower down. Therefore, the Fakfaks do not seem to harbour a population of Mountain Kingfisher *H. megarhyncha*, which replaces *H. torotoro* in most other New Guinea mountains above 1,000 m (Beehler *et al.* 1986). Given the difficulty of identifying them in the field, specimens are needed to ascertain the identity of *Halcyon* kingfishers at high elevations in the Fakfaks.

PAPUAN SPINE-TAILED SWIFT *Mearnsia novaeguineae*

Absent from the Onin and Bomberai peninsulas according to Rand & Gilliard (1968) and Beehler *et al.* (1986), the species is considered to range west to the Mamberamo and Mimika rivers. On 3–5 September 2008, I had good views of several individuals of this distinctive-shaped swift in the environs of Woos, with a single observed at the same locality on 22 June 2009, suggesting that the species' range in the southern watershed extends all the way to the Fakfak region.

YELLOW-BELLIED GERYGONE *Gerygone chrysogaster*

Observed in both years and on several occasions to at least 750 m. Based on their distribution, local populations belong to *G. c. dohertyi*, which is stated to resemble the Vogelkop taxon *G. c. notata* but for the lack of yellowish-white wingbars (Rand & Gilliard 1968). My observations confirm this taxon diagnosis for Fakfak birds.

BROWN-BREASTED GERYGONE *Gerygone ruficollis*

This montane species was previously recorded in the Fakfaks by Gibbs (1994) and J. Diamond (*in litt.* 2011). On 26 June 2009, I found it common at the highest elevations visited (c.1,300 m).

ISLAND LEAF WARBLER *Phylloscopus poliocephalus*

Diamond (1985) initially found this species in the Fakfaks, followed by Gibbs (1994). In 2008–09, I found it commonly anywhere above 900 m (including at ‘Taman Anggrek’), and even as low as 750 m above Waserat. My observations clarify the lower elevational limit in the Fakfaks.

PERPLEXING SCRUBWREN *Sericornis virgatus*

Diamond (1985) found a new population in the Fakfaks at 1,170–1,290 m, which featured among several novel populations from new montane localities. Under his division of the species into two groups, the undescribed Fakfak population belongs to the *virgatus* group, which also occurs in the Sepik Mountains, parts of the Central Range, the Arfak and Kumawa mountains, as well as Yapen. I observed a pair and then three on 6 September 2008 at ‘Taman Anggrek’ at c.950 m, and—a year later—one above Rombena at c.1,000 m. The conspicuous wing markings and treecreeper behaviour make identification unequivocal. My observations possibly mark the lowest recorded elevations for this undescribed taxon.

CHESTNUT-BELLIED FANTAIL *Rhipidura hyperythra*

Common in mixed flocks at mid altitudes in 2008–09. In the lowlands around Woos, I repeatedly saw it (3 and 5 September 2008) near sea level in areas adjacent to the first slopes of the foothills. It is rarely seen in lowland forests (Beehler *et al.* 1986).

BLACK MONARCH *Monarcha axillaris*

Rand & Gilliard (1968) did not list this montane species for the Fakfaks. However, J. Diamond (*in litt.* 2011) and Gibbs (1994) saw it there. I observed 2–3 at ‘Taman Anggrek’ at c.950 m on 6 September 2008 and saw it repeatedly above Rombena at various elevations on 25–26 June 2009. The species appears common in the Fakfaks.

OLIVE-YELLOW (BANDED YELLOW) ROBIN *Poecilodryas placens*

Diamond (1985) discovered a new population in the Fakfaks (at 500–1,130 m) and discussed the species’ peculiarly patchy distribution. Gibbs (1994) also encountered 3–4 individuals. I saw one at 450 m in the hills above Waserat on 29 August 2008, and 3–4 around Rombena at c.900 m on 25–26 June 2009. These observations slightly extend the species’ elevational range in the Fakfak region.

WHITE-FACED ROBIN *Tregellasia leucops*

Diamond (1985) discovered a new population in the Fakfaks which he attributed to the nominate subspecies group that otherwise occurs on the Vogelkop Peninsula, in the Kumawa, Wandammen and Weyland mountains, and on the south slope of the Snow

Mountains. In the absence of specimens, it is unclear if taxonomic recognition of the Fakfak population is warranted. Gibbs (1994) relocated this population on his ascent, but I only found a single at c.1,300 m, i.e. higher than Gibbs' (1994) records.

HOODED PITOHUI *Pitohui dichrous* / **VARIABLE PITOHUI** *P. kirhocephalus decipiens*

These sister species (Dumbacher *et al.* 2008) appear to replace one another elevationally over most of their New Guinea ranges (Beehler *et al.* 1986). In 2008–09, I occasionally saw both in the Fakfaks, with sightings of *P. kirhocephalus* generally at lower elevations than *P. dichrous*. At 'Taman Anggrek' (c.950–980 m), the usually shy *P. dichrous* is a conspicuous and common roadside inhabitant, and was seen on 6 September 2008 in syntopy (in the same trees) with the grey-headed and easily identified *P. kirhocephalus decipiens*. Rather than suggesting that these species are broadly sympatric, this locality might lie at an elevation where they are in narrow contact.

SCLATER'S WHISTLER *Pachycephala soror* taxon novum

During his field work in the Fakfak and Kumawa mountains, Diamond (1985) discovered two new populations of *Pachycephala* that somewhat resemble one another but are distinct from any described species. They most closely resemble Sclater's Whistler *P. soror* and Diamond (1985) attributed them to this species. The Kumawa population was named *P. s. octogenarii*, whereas the Fakfak population, which occurs at 600–1,200 m, was uncollected. Gibbs (1994) confirmed the distinctiveness of their plumage and I also saw (but did not hear) birds at 1,000–1,300 m. Compared to other subspecies of *P. soror*, males had—as described by Diamond (1985)—a near-obsolete breast-band and a greyish rather than black cap and head-sides, whilst females more closely resembled other races of *P. soror*. Other than one Rusty Whistler *P. hyperythra* at 'Taman Anggrek' (c.950 m; see Table 1)—at lower elevations than where I observed Sclater's Whistler—no other montane *Pachycephala* was encountered in the Fakfaks. Specimen collection is necessary to determine the identity of these birds and sound-recordings are needed to compare their vocalisations with those of other subspecies of *P. soror*.

VARIED SITELLA *Daphoenositta chrysoptera*

Beehler *et al.* (1986) considered this species to be found in mountains of the Vogelkop Peninsula and the Central Range at 1,400–2,200 m, but occasionally ranging to 1,075 m. Neither Diamond (1985) or Gibbs (1994) found it in the Fakfaks. On 26 June 2009, I saw a flock of four above Rombena at c.1,200 m. They frequented a steep hillside with large dead trees. The flock comprised all-streaky individuals (apparently none with all-white heads) and the yellow mandible was clearly seen. This may be the first record for the Fakfaks, and for the Bomberai / Onin peninsulas in general.

CAPPED WHITE-EYE *Zosterops fuscicapillus*

Diamond (1985) was first to encounter the species in the Fakfaks, at 1,160–1,270 m, and Gibbs (1994) confirmed its presence. On 26 June 2009, I observed and sound-recorded the species at c.1,300 m, thereby slightly expanding its elevational range in the Fakfaks.

NEW GUINEA BLACK-FRONTED WHITE-EYE *Zosterops minor chrysolaeus*

It was this species, not New Guinea White-eye *Z. novaeguinae*, which I identified at 'Taman Anggrek' (c.950 m) on 6 September 2008 and subsequently saw below Rombena at 200–800 m (24–27 June 2009). Identification was based on the dark forehead and more limited yellow on the breast. Diamond (1985) was unintentionally equivocal in his account

by stating that this species replaces *C. fuscicapillus* at lower elevations wherever the latter occurs, while thereafter listing *Z. novaeguineae* as a further lower-elevation replacement. J. Diamond (*in litt.* 2011) has since clarified that he only saw *Z. minor*, not *Z. novaeguineae* at lower elevations in the Fakfaks, but observed both in the Kumawas. Gibbs (1994) did not encounter either species.

TAWNY STRAIGHTBILL *Timeliopsis griseigula*

On 5 September 2008, I observed 3–4 within a large mixed-species flock in lowland swamp forest c.2 km from Woos. As previously noted for this species (e.g., Diamond 1985), the flock contained many other tawny-coloured birds, such as New Guinea Babblers *Pomatostomus isidorei*, Tawny-breasted Honeyeaters *Xanthotis flaviventer* and various *Pitohui* and female *Coracina* cuckooshrikes. This intriguing pattern of potential mimicry is unexplored. The species was long unknown from the region between the western Vogelkop Peninsula and the Fly River until Diamond (1985) found it in the Kumawa Mountains. My record suggests it is more widespread in the Bomberai and Onin peninsulas.

SILVER-EARED HONEYEATER *Lichmera alboauricularis*

Two in swampy inundated roadside forest c.2 km from Woos and just above sea level on 3 September 2008. Known only from far north-west New Guinea, the northern watershed and near Port Moresby (Beehler *et al.* 1986), my record represents a substantial range extension. The solid-brown upperparts, heavily speckled underparts and narrow yellow ear-coverts eliminate any other similar-sized and shaped honeyeater. It is potentially widespread in coastal areas but restricted to habitats difficult of access.

SCRUB WHITE-EARED MELIPHAGA *Meliphaga albonotata*

Beehler *et al.* (1986) considered this species of disturbed habitats ‘uncommon in lowlands’, but Diamond (1985) observed it in the coastal environs of the Kumawa and Wandammen mountains. I observed one in an inundated clearing at Woos near sea level on 3 September 2008. The species may benefit from anthropogenic habitat alteration.

FOREST WHITE-EARED MELIPHAGA *Meliphaga montana*

Diamond (1985) clarified that this is a montane species of the northern watershed and extended its range in West Papua to the Kumawa and Fakfak mountains, where he reported it as being somewhat uncommon at 560–930 m. On 6 September 2008, I made detailed observations of two at c.850 m near ‘Taman Anggrek’. My notes mention two large-bodied *Meliphaga* with a strong bill, brownish-olive upperparts, a small ear-spot and moderate rictal streak. In good light, the ear-patch of one appeared white and the other yellowish, whereas the rictal streak was bright white on both. This suggests that one of the two was a juvenile.

MOUNTAIN MELIPHAGA *Meliphaga orientalis*

Diamond (1985) was first to observe the species in the Fakfaks, encountering it commonly at 900–1,200 m. I saw one well at c.1,300 m on 26 June 2009.

YELLOW-GAPED MELIPHAGA *Meliphaga flavirictus*

This canopy-dweller is the rarest *Meliphaga* and one of the hardest to identify. My two sightings of singles (possibly the same?) on 25 June 2009 were in an area of fruiting trees at c.800 m near Rombena, where they were associating with mixed-species canopy flocks. I noted the small size, unstreaked underparts, relatively slender bill, small pale yellow,

roundish ear spots and yellow gape stripe. This appears to be the first record from the Onin and Bomberai peninsulas.

SMOKY HONEYEATER *Melipotes* taxon novum

Melipotes have a complicated checkerboard distribution across New Guinea's highlands. Diamond (1985) found new populations in the Kumawa and Fakfak mountains that he attributed to Common Smoky Honeyeater *M. fumigatus* from the Central Range, rather than to Arfak Honeyeater *M. gymnops* from the adjacent Wandammen and Vogelkop peninsulas. The Kumawa birds were described as *M. f. kumawa*, but Fakfak birds have not been collected. Disagreeing with Diamond's (1985) diagnosis, Gibbs (1994) considered birds from the Fakfaks to be more akin to *M. gymnops* than to *M. fumigatus* based on the pale belly. However, he added that the unusual shape of the facial skin wattles recalls the distant Spangled Honeyeater *M. ater* from the Huon Mountains, and that Fakfak birds may merit species rank. Gibbs (1994) was unaware of the new species in the Foja Mountains, Wattled Smoky Honeyeater *M. carolae*, subsequently described by Beehler *et al.* (2007), which closely resembles *M. ater*—and possibly Fakfak birds—in the shape of the facial wattles. On 26 June 2009 I briefly observed two at c.1,300 m above Rombena. Although they were clearly *Melipotes*, low cloud and the brevity of the sighting prevented me from making detailed observations. However, although the facial wattles were seen only briefly, they appeared atypical in shape and size for *M. fumigatus*, thereby supporting Gibbs's (1994) suggestion that the wattles of birds in the Fakfaks may be morphologically unusual. Specimen collection is necessary to resolve this issue.

GREATER MELAMPITTA *Melampitta gigantea*

Extremely patchily distributed throughout New Guinea (Beehler *et al.* 1986), the species was found to inhabit karstic undergrowth in the Fakfaks where it roosts in sinkholes (Diamond 1983). In the morning of 25 June 2009, I sound-recorded an unknown melodious song just above Rombena at c.900 m. On playback, I observed an adult hopping closer, affording good views. The same song was subsequently heard all the way to the highest point reached (c.1,300 m) and I realised that I had also sound-recorded it at 'Taman Anggrek' (c.950 m) on 20 June 2009. The species is extremely wary but appears common in the karstic substratum of the Fakfaks. Vocal activity (and therefore detectability) is perhaps seasonal, which may explain why none was heard in late August and early September 2008 by myself or in late August–early September 1992 by Gibbs (1994). Alternatively, the bird does sing at this period but was merely overlooked.

VOGELKOP BOWERBIRD *Amblyornis inornatus*
Vogelkop Bowerbirds on the Kumawa and Fakfak mountains construct bowers very different from those in the Arfak and Wandammen mountains (Diamond 1986, 1988, Uy & Borgias 2000), although



Figure 2. The elaborate stick bower of the Fakfak population of Vogelkop Bowerbird *Amblyornis inornatus*; the area at the base of the bower is cleared and surrounded by a strip of gastropod shells; the inset shows the gastropod shells close up (Frank E. Rheindt)

the plumage of these populations is near-identical. Some commentators have proposed that those birds in the Fakfaks and Kumawas are specifically distinct from *A. inornatus* (Gibbs 1994). Bower-building is conceivably learned, and little is known of female choice behaviour among populations with different bower-building habits. Mitochondrial DNA (mtDNA) divergence between Fakfak and Arfak birds is just 0.5%, i.e., similar to the 0.2–0.4% inter-population differences within bowerbird species that do not differ in bower construction (Kusmierski *et al.* 1997, Uy & Borgia 2000). Since bowerbirds in the Fakfaks cannot be very numerous, this low mtDNA divergence indicates a recent common ancestor between populations from the Fakfaks and nearby ranges. However, mtDNA is known to be unreliable in certain evolutionary scenarios (e.g., in cases of genetic introgression), making a more detailed investigation using nuclear loci necessary to examine the differences between Fakfak and Arfak populations.

On 27 June 2009, I observed a male at its bower above Rombena at c.1,300 m. The bower (Fig. 2) resembled those previously described (Diamond 1986, 1988, Uy & Borgia 2000) in being an elaborate stick construction atop a cleared patch surrounded by strips of gastropod shells, which are presumably harvested from subterranean water sources deep in limestone crevices. The male occasionally gave its 'outlandish' vocalisations, which were sound-recorded, cf. www.xeno-canto.org under the accession nos. XC92510 and XC92511. This form's previously undescribed vocalisations vary but vaguely recall those of the Arfak population, although they are even more bizarre and non-avian-sounding. Some motifs are reminiscent of a loud squeaking door, others recall a cat in heat or giving birth.

Discussion

Outlying mountain ranges north and west of the Central Papuan Range are among the ornithologically least-explored regions in the world, despite that Diamond (1985) spent many months there. Apart from a recent biological inventory of the Foja Mountains (Beehler *et al.* 2007, Beehler & Prawiradilaga 2010), there has been no ornithological collecting in any of these regions in almost three decades. Of the least explored of these ranges, the two most extensive are those on the Bomberai and Onin peninsulas, namely the Fakfaks and Kumawas. Gibbs (1994) followed in Diamond's (1985) footsteps to the top of the Fakfaks during a brief period when oil exploration made access easier. He made exciting additional discoveries that had eluded Diamond (1985), indicating that the Fakfak Mountains may yet hold additional undiscovered avian taxa.

My work added two species to the avifauna of the Fakfaks (*Daphoenositta chrysoptera*, *Meliphaga flavirictus*) and at least seven to that of the lowlands of the Onin and Bomberai peninsulas (*Talegalla fuscirostris*, *Ptilinopus c. coronulatus*, *Cyclopsitta gulelmitertii*, *Mearnsia novaeguineae*, *Timeliopsis griseigula*, *Lichmera alboauricularis*, *Meliphaga albonotata*). Many of the latter are taxa whose southern distribution has hitherto been assumed to be bounded in the west by the Mimika River or Etna Bay, demonstrating that a sizeable component of southern Papuan lowland birds extend much further west than previously known. I also uncovered elevational range extensions or the first precise details of elevational occurrence for some montane birds, and documented the vocalisations of the undescribed Fakfak population of *Amblyornis inornatus*.

Despite substantial efforts, it was difficult to reach high elevations because all infrastructure associated with oil exploration has disappeared. Once elevations above 1,200 m were finally reached in 2009, logistical constraints precluded spending much time there, and bad weather further reduced observation time. These factors doubtless contributed to my overlooking two key taxa encountered by Diamond (1985) and Gibbs (1994), i.e. potentially new taxa of *Ptiloprora* and *Paradigalla*.

Despite the new insights gained, all of the Fakfak range's potential new taxa (which may number as many as ten) are still undescribed and the mountains remain incompletely explored. The author is presently attempting to mount a collecting expedition to the Fakfaks and Kumawas in collaboration with the Indonesian authorities to address the dearth of knowledge of one of the world's last patches of ornithological *terra incognita*.

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